

Salem, VA



Solar Projects at Landfills

Virginia Brownfields Conference
March 16, 2017

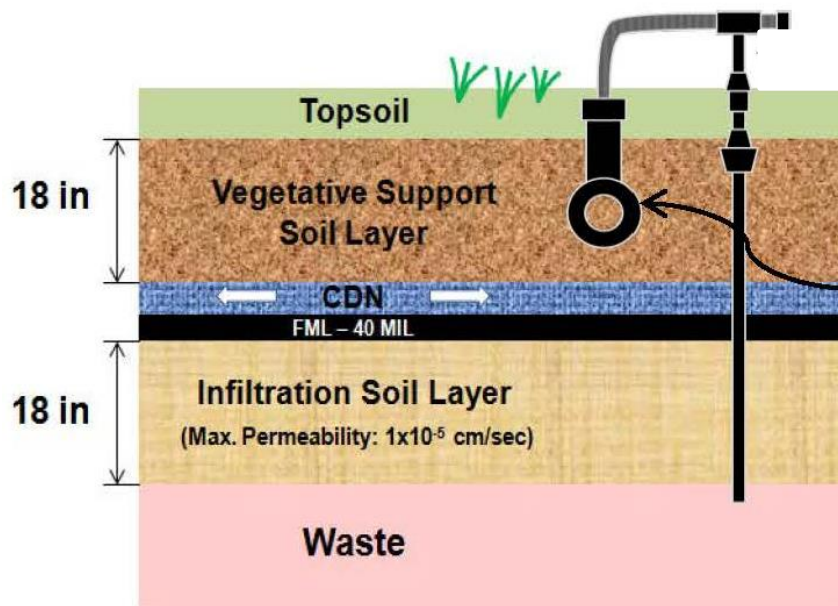
Kathryn Perszyk
Solid Waste Permit Coordinator



Overview

- Landfill Closure/Post-Closure Care Requirements
- Code of Virginia Energy Efficiency Exemption
- Example: Salem VA Medical Center Landfill Solar Project (2013)

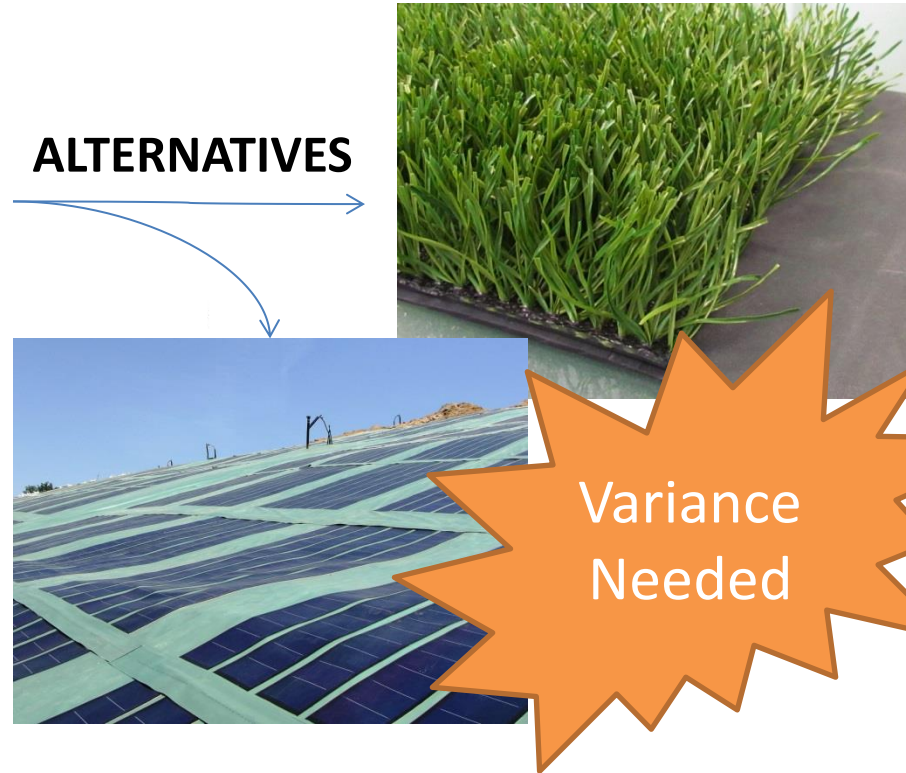
Closure Performance Standard



CAP SYSTEM

(Photo credit: Loudoun.gov)

ALTERNATIVES



- Guidance Memo 2014-01: Clarification of Required Final Cover Designs and Acceptable Alternate Designs

Postclosure Care Requirements



Mt. Trashmore, VA Beach

Postclosure use of the property shall not disturb the integrity of the final cover ... The director may approve a disturbance if demonstrated that no increase to potential threat to HHE

Final Cover Maintenance

Leachate Management

Groundwater Monitoring

Landfill Gas Monitoring

Permit Modifications

- Changes in postclosure use of the property, without disturbance of the cover **Permittee Change**
 - 14 day advance notification
 - Local gov't notification w/in 90 days after change
- Changes in postclosure use of the property with disturbance of cover **Major Modification**
 - Modification Fee and DEQ application review
 - Draft Permit development and public participation

Relief for
Energy
Projects

Energy Efficiency Exemption

Virginia Code § 10.1-1408.1(E)

Effective July 1, 2012

“To the extent allowed by federal law, any person holding a permit that is intending to upgrade the permitted solid waste management facility by installing technology, control equipment, or other apparatus that the permittee demonstrates to the satisfaction of the Director will result in improved energy efficiency, protect waters of the state, including both surface and ground water, and protect air quality shall not be required to obtain a modified or amended permit.”

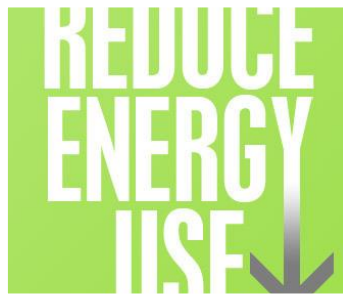
Draft Guidance for Energy Efficiency Exemption

Exemption Qualifications:

1. Existing solid waste permit
2. Planned installation of “technology, control equipment, or other apparatus”
3. Facility upgrade
4. Purpose of improved energy efficiency
5. Satisfy director:
 - Improved energy efficiency will occur
 - The waters of the state will be protected
 - Air quality will be protected

Draft Guidance for Energy Efficiency Exemption

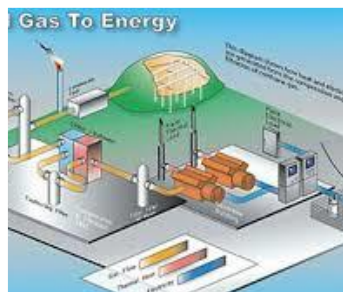
Improved Energy Efficiency



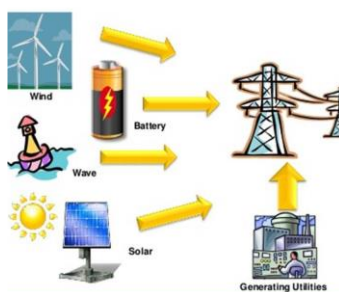
Upgrades to Reduce Energy Consumption



Upgrades to Switch to Alt Energy Source



Create a New Energy Source



Connection to the Power Grid

Exemption does NOT relieve the facility from obtaining any other local, state, or federal permits required by law or regulation.

Draft Guidance for Energy Efficiency Exemption



Solid Waste Management Facility Permit Modification Exemption Demonstration

I. FACILITY INFORMATION

						Permit No.	
A. Facility Location							
Facility Name:							
Address:						Zip:	
City:				State:			
B. Facility Contact Information							
Contact Person:				Title:			
Contact Phone:				E-mail:			
Owner				Operator:			
Address:				Address:			
City:		State:		Zip:		City:	
						State:	
						Zip:	

II. EXEMPTION INFORMATION

A. Technology, Control Equipment, or Other Apparatus (Description)	
<div></div>	

What about Pre-88 or Unpermitted Landfills?

- 9 VAC 20-81-35.E.
- This chapter is not applicable to landfill units closed in accordance with regulations or permits in effect prior to December 21, 1988, unless
 - releases from these closed landfills meet the open dump criteria found in 9VAC20-81-45, or
 - the closed landfills are found to be a hazard or a nuisance under subdivision 21 of § 10.1-1402 of the Code of Virginia, or
 - a site where improper waste management has occurred under subdivision 19 of § 10.1-1402 of the Code of Virginia.



Owners should be aware of these criteria to avoid VSWMR applicability to solar development projects

Example Project

Salem VA
Medical Center
Landfill Solar
Project



Landfill History



- CDD landfill
 - approximately 12 trenches
 - 1 area fill
 - 1 asbestos fill area
- Granted final closure status in 1998
- Soil cap
 - 2' soil
 - vegetated

Solar Project Basics

- DVA renewable energy initiative
- 1.62 MW
 - 10-12% of campus energy consumption
- 6 acres (whole landfill)
- \$5 million cost
 - \$160,000/year energy cost savings
 - 25 year pay-back period
- Operational by November 2013

DEQ Submission Requirements

- No permit modification (energy efficiency exemption)
 - Update to closure plan still submitted and reviewed
- No small solar project PBR (project falls into “de minimis” category)
 - DEQ notification required
 - Local certification not required because the project on VA property



DEPARTMENT OF VETERANS AFFAIRS
Medical Center
Salem, VA 24153

July 2, 2013

In Reply Refer To: 658/003

• Ms. Carol C. Wampler
Renewable Energy Policy Manager
Department of Environmental Quality
P. O. Box 1105
Richmond, Virginia 23218
carol.wampler@deq.virginia.gov

Dear Ms. Wampler:


On behalf of Department of Veterans Affairs, I am hereby providing notice to the Department of Environmental Quality of our intention to construct a small renewable energy project (solar) at the VA Medical Center Salem in Salem, Virginia, pursuant to Virginia Regulation 9VAC15-60-130.B. This project will be subject to provision 9VAC15-60-130.B because the rated capacity of the project will be 1.7 megawatts.

This project will be constructed at the Southeast corner of VA property, immediately west of Peters Creek Road and immediately north of the Norfolk Southern railroad. It will be constructed on our closed landfill, a parcel approximately six acres. The solar photovoltaic array will consist of 6,084 panels (270 watts/panel), and three 500 KW inverters, a step-up transformer (480V:4160V) and 2,100 feet of medium voltage feeder. It will tie into our electrical distribution system. All power generated will be consumed by VA needs.

As this project is constructed entirely on VA property, there are no municipal certifications or land use ordinances required.

If the Department has questions regarding this project, please contact the undersigned at clayton.helms@va.gov, or 540-982-2463, extension 1061.

Sincerely,


CLAYTON L. HELMS
Chief, Facility Management Service

Design Basics

- Vegetation removed
 - No more than 6" of cover removed
 - Geotextile
 - 6" stone
-
- SnapNrack Series 450 ballasted roof mount
 - No ground attachment required
 - 6,084 solar panels



